

Mecklenburg County Common Code Defects

Residential Building

Code Defects

- Ridge beam not sized correctly to create Cathedral Ceiling.
- Engineered floor trusses and damage repairs.
- Engineered roof trusses and damage repairs.

Code Description

Section R802.3.1 Cathedral ceiling.

“When ceiling joists and rafter ties are omitted and the rafters are used to create a cathedral ceiling, rafter ends shall be supported on bearing walls, headers or ridge beams designed in accordance with accepted engineering practice. Rafters shall be attached to the support in accordance with Table R602.3(1). Ridge beams shall be capable of carrying the imposed roof loads and shall be supported by structural elements which transmit the loads to the foundation.”

Section 802.10.2 Trusses (Roof and Floor)

“Wood trusses shall be designed in accordance with accepted engineering practice. The design and manufacture of metal plate connected wood trusses shall comply with ANSI/TPI 1. Trusses shall be braced to prevent rotation and provide lateral stability. Truss members shall not be cut, notched, drilled, spliced or otherwise altered in any way without the approval of a registered design professional. Alterations resulting in the addition of load (e.g., HVAC equipment, water heater) that exceeds the design load for the truss shall not be permitted without verification that the truss is capable of supporting such additional loading. If altered or cut, a truss repair design must be obtained from a professional engineer verifying the proper repair method to be used.”

Possible Options:

In this situation, the ridge beam for the cathedral ceiling must be sized sufficiently to be capable of carrying the imposed roof loads and not push the wall system outward.

When roof and/or floor trusses are used, trusses shall be braced according to their appropriate engineered design. (Please view the attached drawings and nailing schedule).

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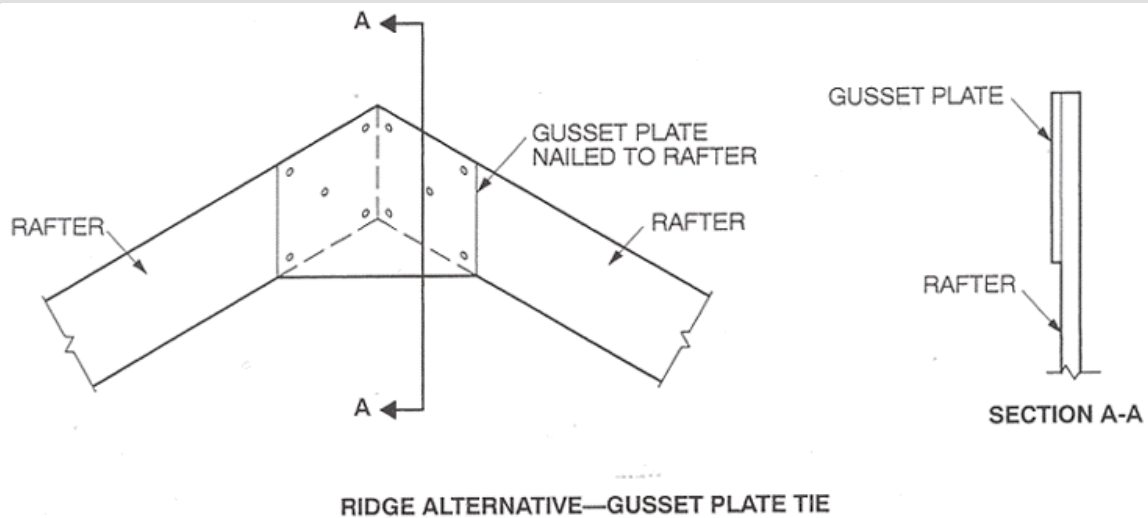
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Disclaimer: *There may be other ways to comply with the Code. If so, you are not required to use this method to comply with the Code. You may want to investigate other options, or consult with a design professional identifying an equally code compliant solution.*

FASTENER SCHEDULE FOR STRUCTURAL MEMBERS

DESCRIPTION OF BUILDING ELEMENTS	NUMBER AND TYPE OF FASTENER ^{a,b,c,d}	SPACING OF FASTENERS
Joist to sill or girder, toe nail	3-8d	--
1"x6" subfloor or less to each joist, face nail	2-8d 2 staples 1 ¾	-- --
2" subfloor to joist or girder, blind & face nail	2-16d	--
Sole plate to joist or blocking, face nail	16d	16" o.c.
Top or sole plate to stud, end nail	2-16d	--
Stud to sole plate, toe nail	3-8d or 2-16d	--
Double studs, face nail	10d	24" o.c.
Double top plates, face nail	10d	24" o.c.
Sole plate to joist or blocking at braced wall panels	3-16d	16" o.c.
Double top plates, minimum 48-inch offset of end joints, face nail in lapped area	8-16d	--
Blocking between joists or rafters to top plate, toe nail	3-8d	--
Rim joist to top plate, toe nail	8d	6" o.c.
Top plates, laps at corners & intersections, face nail	2-10d	--
Built-up header, two pieces with ½" spacer	16d	16" o.c. along each edge
Continued header, two pieces	16d	16" o.c. along each edge
Ceiling joists to plate, toe nail	3-8d	--
Continuous header to stud, toe nail	4-8d	--
Ceiling joist, laps over partitions, face nail	3-10d	--
Ceiling joist to parallel rafters, face nail	3-10d	--
Rafter to plate, toe nail	2-16d	--
1" brace to each stud and plate, face nail	2-8d 2 staples, 1 ¾	-- --
1"x6" sheathing to each bearing, face nail	2-8d 2 staples, 1 ¾	-- --
1"x8" sheathing to each bearing, face nail	2-8d 3 staples, 1 ¾	-- --
Wider than 1"x8" sheathing to each bearing, face nail	3-8d 4 staples, 1 ¾	-- --
Built-up corner studs	10d	24" o.c.
Built-up girders and beams, 2-inch lumber layers	10d	Nail each layer as follows: 32" o.c. at top & bottom & staggered. Two nails at ends & at each splice
2" planks	2-16d	At each bearing
Roof rafters to ridge, valley or hip rafters:		
Toe nail	4-16d	--
Face nail	3-16d	--
Rafter ties to rafters, face	3-8d	--

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EXAMPLE ONLY



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End Notes

North Carolina State Building Code

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